

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/015948 A1

(51) International Patent Classification⁷: **H04R 7/04**

(21) International Application Number:
PCT/GB2004/003038

(22) International Filing Date: 13 July 2004 (13.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0317331.7 24 July 2003 (24.07.2003) GB

(71) Applicant (for all designated States except US): **NEW TRANSDUCERS LIMITED** [GB/GB]; Cygnet House, Kingfisher Way, Hinchingsbrooke Business Park, Huntingdon, Cambs PE29 6FW (GB).

[GB/GB]; c/o New Transducers Limited, Cygnet House, Kingfisher Way, Hinchingsbrooke Business Park, Huntingdon, Cambs PE29 6FW (GB). **MARCHANT, Andrew** [GB/GB]; c/o New Transducers Limited, Cygnet House, Kingfisher Way, Hinchingsbrooke Business Park, Huntingdon, Cambs PE29 6FW (GB). **COLLOMS, Martin** [GB/GB]; c/o New Transducers Limited, Cygnet House, Kingfisher Way, Hinchingsbrooke Business Park, Huntingdon, Cambs PE29 6FW (GB). **BURTON, Paul** [GB/GB]; c/o New Transducers Limited, Cygnet House, Kingfisher Way, Hinchingsbrooke Business Park, Huntingdon, Cambs PE29 6FW (GB).

(74) Agent: **MAGUIRE BOSS**; 5 Crown Street, St Ives, Cambridgeshire PE27 5EB (GB).

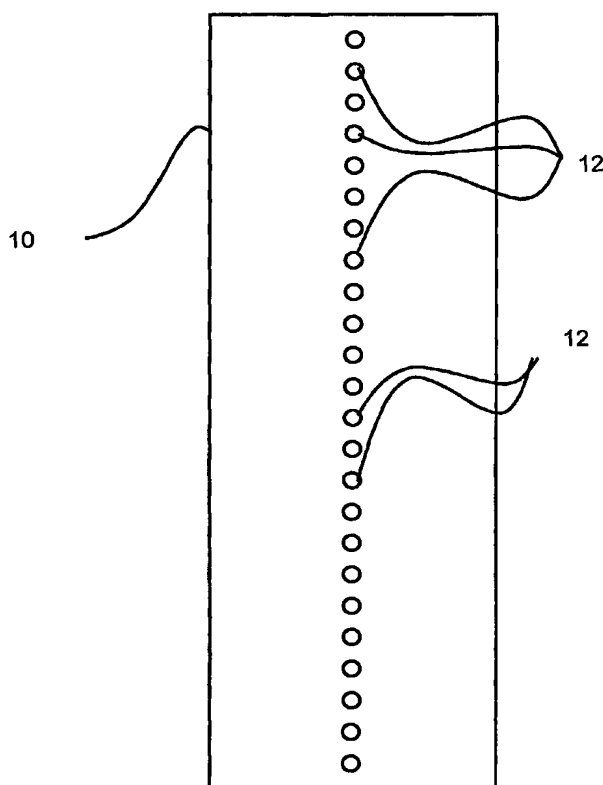
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BANK, Graham**

[Continued on next page]

(54) Title: **ACOUSTIC DEVICE**



(57) Abstract: A bending wave loudspeaker having an operating frequency range and a coincidence frequency which is above the operating frequency range, comprising a resonant panel having two generally orthogonal axes, vibration exciting means coupled to the panel to excite the panel into resonance along the one axis of the panel, and means restraining or preventing resonance along the other axis of the panel whereby the panel radiates an acoustic output which is of wide directivity along the one axis and of narrow directivity along the other axis of the panel.

WO 2005/015948 A1

WO 2005/015948 A1

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.